

**Amended Claims:**

1. (Cancelled)
2. (Previously Presented) The measurement device of claim 17, wherein the transmitting means comprises at least electrodes for transmitting spread spectrum current signals into the patient's body.
3. (Previously Presented) The measurement device of claim 17, wherein the transmitting means includes means for transmitting current signals into the patient's body and the detecting means comprises measuring voltage signals.
4. (Previously Presented) The measurement device of claim 17, wherein the transmitting means comprises means for transmitting spread spectrum voltage signals into the patient's body.
5. (Previously Presented) The measurement device of claim 4, wherein the detecting means comprises means for measuring current signals corresponding to the transmitted spread spectrum voltage signals.
6. (Cancelled)
7. (Previously Presented) The measurement device of claim 17, wherein the transmitting and detecting means transmit and detect spread spectrum electrical signals via a device electrode, the means for generating a measured parameter signal generates an impedance signal, and the means for analyzing the measured parameter signal to measure the desired physiological condition comprises means for analyzing the impedance signal to determine a contact impedance of the device electrode.
8. (Previously Presented) The measurement device of claim 17, wherein the measured parameter signals are impedance signals and the analyzing

means comprises means for analyzing the impedance signal to determine a heart rate of a patient.

9. (Previously Presented) The measurement device of claim 17, wherein the measured parameter signals are impedance signals and the analyzing means comprises means for analyzing the impedance signal to determine a respiration rate of a patient.

10. (Previously Presented) The measurement device of claim 17, wherein the transmitting means comprises an ultrasound transducer for transmitting ultrasound signals into the patient's body.

11. (Previously Presented) The measurement device of claim 10, wherein the analyzing means comprises means for analyzing echoes at each frequency of the ultrasound signal to determine a heart rate of a patient.

12-16. (Cancelled)

17. (Currently amended) A spread spectrum measurement device for measuring a desired physiological condition of a patient while avoiding degradation in an accuracy of the measured physiological conditions due to interference from nearby electronic equipment, the device comprising:

5 means for transmitting spread spectrum signals spread across a wide spectrum of frequencies in a measurement band of at least approximately 1-2 kHz into a patient's body;

means for detecting signals from the patient's body corresponding to the transmitted spread spectrum signals;

10 means for generating a measured parameter signal from a cross-correlation of the transmitted and detected signals;

means for analyzing the measured parameter signal to measure the desired physiological condition.

18. (Previously Presented) The measurement device of claim 28, wherein the processor is programmed to analyze the measured parameter signal to measure a selected physiological condition selected from a group consisting of:

5 heart rate;  
blood flow;  
blood pressure;  
respiration rate;  
contact impedance;  
tissue images; and  
10 blood oximetry measurements.

19. (Cancelled)

20. (Currently amended) A spread spectrum medical diagnostic measurement device comprising:

electrodes contacting a medical patient;  
a signal transmitter which transmits a spread spectrum electrical input  
5 signal to the medical patient via at least some of the electrodes, the signal transmitter including a random signal generator configured to generate a random signal used in generating the spread spectrum electrical input signal within a frequency band ranging from 30 to 60 kHz;

10 a signal detector configured to detect a spread spectrum electrical signal using at least some of the electrodes and to cross-correlate parameters of the detected spread spectrum electrical signal to produce a measured parameter signal; and

a signal processor configured to analyze the measured parameter signal to determine a physiological condition of the medical patient.

21. (Previously Presented) The device of claim 28, wherein the transmitter transmits a spread spectrum ultrasound signal.

22. (Previously Presented) The device of claim 28, wherein the transmitter transmits a spread spectrum light signal.

23. (Cancelled)

24. (Previously Presented) The measurement device of claim 17 wherein the transmitting means includes:

means for generating a clock signal;

means for generating random numbers; and

5 means for dividing the clock signal by the generated random numbers to generate a randomized clock signal that is used in generating the spread spectrum signal.

25-26. (Cancelled)

27. (Previously Presented) The device of claim 20 wherein the physiological condition determined by the signal processor includes at least one of contact impedance, heart rate, and respiration rate.

28. (Currently amended) A spread spectrum physiological condition measurement device including:

a transmitter for conveying an input spread spectrum signal to a patient in a spread measurement band of at least approximately 1-2 kHz;

5 a signal detector electrically connected to the patient to detect signals corresponding to the input spread spectrum signal;

a random signal generator which supplies a signal to the transmitter that is used by the transmitter to generate the input spread spectrum signal and also to the signal detector that is used by the signal detector to cross-correlate the detected  
10 signals corresponding to the input spread spectrum signal with the input spread spectrum signal to generate a measured parameter signal; and

a processor programmed to:

analyze the measured parameter signal to measure a selected physiological condition.

29. (New) The spread spectrum physiological condition measurement device as set forth in claim 28, wherein the transmitter conveys the input spread spectrum signal to the patient in a spread measurement band of at least approximately 30-60 kHz.